A Global Harvest of Knowledge

In its service role to regulatory and action agencies within the U.S. Department of Agriculture and the federal government in general, the Agricultural Research Service faces many issues that extend beyond U.S. borders. Some of the more noteworthy include:

•the ability of developing countries to feed themselves

•the threat of foreign diseases to our crops and livestock

•the need to ensure that U.S. crops don't harbor diseases or pests that might restrict their trade

•a responsibility to lead in developing scientific and intellectual capacity worldwide.

These challenges have taken on greater emphasis at USDA and ARS. So, globalization of selected strategic areas of work is a natural evolution of our national programs.

Several of ARS' major programs now have global implications. Food safety is one. We're insisting that our trade partners establish and adhere to certain quality standards because more of the American diet comes from sources outside the United States.

Germplasm collection and enhancement is another. As the genetic base of many crops shrinks and wild species are displaced by a burgeoning human population, the need increases to locate and exchange genetic resources around the globe.

Feeding this population will increasingly rest on genomics and genetic improvement—a third global issue. Knowing the location of desirable genes and how best to manipulate them dramatically reduces the time it takes to tailor crops and animals so they produce more edibles with fewer inputs.

Production agriculture is a fourth issue. As the population continues to grow, so does the need for large-scale, mechanized farming to provide enough food.

And lastly, environmental protection has become an international issue during the last decade. Countries participating in the North American Free Trade Agreement (NAFTA) must strive to meet high air and water quality standards.

These new challenges face not only ARS. They call for entirely new partnerships and multinational alliances involving nongovernmental organizations and the commercial sector—along with our traditional government counterparts.

In October 1999, we formed ARS' Office of International Research Programs, recognizing the need for international programs and program leadership—along with our national programs—in order to best serve even our domestic constituencies (see story on p. 4).

While not every international project we participate in needs to confer a direct return on our investment, the projects overall either provide a tangible benefit to U.S. consumers or support countries that are important to the future of our own.

For instance, we have had a long-standing research program with Israel under the Binational Agricultural Research and Development fund (BARD). Since its inception in 1977, BARD has financially supported more than 850 research projects of mutual benefit to both countries.

Our germplasm system is such that we can bring global resources to bear in solving food insecurity in parts of Africa. And our biotechnology skills can be used to support a more productive agricultural sector in many parts of the developing world. Under a memorandum of understanding with the Consultative Group on International Agricultural Research (CGIAR), ARS is partnering with CGIAR-member centers throughout the world to develop stress-tolerant germplasm through innovative biotechnological approaches.

Our search for new agricultural products can do more than just sustain the viability of farm enterprises. It may also create cures for diseases, uncover unique phytonutrients, or introduce entirely new views on what constitutes good nutrition. And our research on bio-based energy may produce new fuels that are both more efficient and environmentally benign.

Superimposed on all of this is the need to promote science education and capacity. ARS can play a global role in promoting science and technology. In fact, our scientists are helping all over the world to train a new generation of researchers to meet the needs of the new millennium.

•We cooperate with Latin American countries to advance research in graduate education through the Tropical Agricultural Research and Higher Education Center (CATIE) and various U.S.-based universities.

•We cooperate with ministries of agriculture in Africa to ensure advanced training of scientists who will work towards food security for the peoples of Africa.

•We collaborate with scientists from the former Soviet Union to enable them to make the transition from developing biological weapons to working on modern, peacetime research.

•We also enhance scientific exchange worldwide through the National Agricultural Library, through our germplasm and genomics databases, and through the newly established Wallace Memorial Conferences, which will focus on agricultural issues in the Western Hemisphere.

To adequately serve U.S. agriculture, a research presence in strategically chosen regions of the world is essential.

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